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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,881	12/31/2003	Eric DiStefano	P18069	8886
25694	7590	07/01/2005	EXAMINER	
INTEL CORPORATION P.O. BOX 5326 SANTA CLARA, CA 95056-5326			MCKINNON, TERRELL L	
			ART UNIT	PAPER NUMBER
			3743	

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/749,881

Applicant(s)

DISTEFANO ET AL.

Examiner

Terrell L. Mckinnon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Amendment***

Receipt is acknowledged of applicant's amendment filed April 7, 2005. Claims 1-25 are pending and an action on the merits is as follows.

Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new grounds of rejection.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-5, 8-11, 14-16, 20-22 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Hood, III et al. (U.S. 6,837,063).

Hood discloses a cooling system for computers comprising all of the applicant's claimed and disclosed limitations of the instant invention (column 5, lines 54-67).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6, 7, 17, 18, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hood, III et al. (U.S. 6,837,063) in view of Houle et al. (U.S. 2005/00068725).

Hood's invention discloses all of the claimed limitations from above except for the active cooling component including liquid metal cooling, and wherein the liquid coolant is liquid metal; wherein the liquid metal includes one of Indium (In), Gallium (Ga), or a mixture of Indium and Gallium with trace amounts of other metals.

5. However, Houle teaches the use of an active cooling component includes liquid metal cooling, and wherein the liquid coolant is liquid metal; wherein the liquid metal includes one of Indium (In), Gallium (Ga), or a mixture of Indium and Gallium with trace amounts of other metals (sections [0062] and [0052]).

Given the teachings of Houle, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the cooling system of Hood with active cooling component includes liquid metal cooling, and wherein the liquid coolant is liquid metal; wherein the liquid metal includes one of Indium (In), Gallium (Ga), or a mixture of Indium and Gallium with trace amounts of other metals.

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Doing so would provide thermally efficient cooling fluids for transferring heat to heat radiators.

6. Claims 12, 13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hood, III et al. (U.S. 6,837,063) in view of Houle et al. (U.S. 2005/00068725) as applied to claims above, and further in view of Suzuki (U.S. 6,105,662).

Hood's invention, as modified by Houle, discloses all of the claimed limitations from above except for a second device capable of generating heat, wherein the second device is to be cooled using a second heat pipe; an evaporation end of the second heat pipe is coupled to the second device, and wherein a condensation end of the second heat pipe is coupled to the heat exchanger.

7. However, Suzuki teaches the use of cooling multiple devices using a second heat pipe; an evaporation end of the second heat pipe is coupled to a second device, and wherein a condensation end of the second heat pipe is coupled to the heat exchanger.

Given the teachings of Suzuki, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the cooling device of Hood with a second device capable of generating heat, wherein the second device is to be cooled using a second heat pipe; an evaporation end of the second heat pipe is coupled to the second device, and wherein a condensation end of the second heat pipe is coupled to the heat exchanger.

Doing so would provide an alternative cooling structure for cooling multiple heat generating devices.

### ***Response to Arguments***

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Applicant's arguments filed April 7, 2005 have been fully considered but they are moot in view of the above-mentioned Rejection.

Applicant's states, Hileman or Yamamoto disclose or suggest the applicant's claimed invention.

Hood in view of Houle and further in view of Suzuki discloses the applicant's instant invention.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited for disclosing related limitations of the applicant's claimed and disclosed invention.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terrell L. Mckinnon whose telephone number is 571-

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272-4797. The examiner can normally be reached on Monday -Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennett can be reached on 571-272-4791. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Terrell L McKinnon  
Primary Examiner  
Art Unit 3743  
June 27, 2005